MEMORANDUM ON FOREST INSECT CONDITIONS ON THE DIXIE NATIONAL FOREST, UTAH. SEPTEMBER 1940.

On September 4 and 5 a general examination of forest insect conditions on parts of the eastern division of the Dixie National Forest was made by R. L. Furniss and D. A. Hester of the Bureau of Entomology and Plant Quarantine, Mr. Clark Miles of the Regional Office, and Supervisor Blaine Betenson and Rangers W. H. Hurst and Wilford Bentley of the Dixie Forest. The primary purpose of this examination was to determine the status of bark beetle infestation in ponderosa pine on those areas where the forest personnel had observed "red tops" resulting from attacks in 1939. No attempt was made to cover the entire forest. Road traverses were made principally in Townships 36, 37, 38, and 39 South; Range 7 West. Counts of "red tops" were made from vantage points wherever possible. Particular attention was paid to the area around Panguitch Lake and the Mammoth Creek, Strawberry Creek, and Swains Creek drainages. The latter area was most intensively examined.

Black Hills Beetle Situation

General- Infestation in ponderosa pine, except at the head of Swains Creek, was found to be very light. Trees killed in 1939 occurred as widely scattered individuals or in groups of 2 or 3. So far as could be determined the 1940 attacks were no more prevalent. Broods were of a mixed character. For the most part the base of infested trees contained Dendroctonus barberi Hopk., D. convexifrons Hopk., D. approximatus Dietz, and Ips spp. Higher on the bole the trees were usually attacked by the Black Hills beetle (Dendroctonus ponderosae Hopk.)

Swains Creek Area- The timber at the headwaters of this creek has not been covered by recent control operations. As a result a considerable nucleus of infestation still exists. A partial count of the "red tops" on approximately two sections on this area showed somewhat over 100 trees, a considerable number of which were in groups of 5 to 10 trees. As nearly as could be determined from an examination of the trees around some of these groups, the new attacks occurred in about a 1 : 1 ratio in comparison with attacks made last year. Although the broods were somewhat mixed, the Black Hills beetle attacks were considerably more dominant than on other areas that were examined.

Recommendations- The bark beetle situation on the areas examined, with the exception of the Swains Creek drainage, was definitely endemic as indicated both by the number of infested trees and by the character of the attacks. As a usual thing no attempt is made to control endemic infestations for it is well established that at this stage artificial control will fail to materially reduce the amount of infestation. The thought has been expressed by Mr. W. L. Robb, Supervisor Betenson, and others that each infested tree should be considered as a hazard to the green stand and that control measures should be applied whenever one appears and before there is any possibility of a buildup. This is an interesting contention and might be attempted as a basis of comparison with the usual method of reducing an infestation to endemic proportions and then waiting until a definite increase occurs before control measures are applied again.

If this type of intensive maintenance control is attempted it should be with the understanding that it is on an experimental basis and is not generally recommended until its merits have been demonstrated. For the present it is felt that where an experienced insect detection force is available there will be little liklihood of a buildup that cannot be economically handled as soon as the number of new attacks show a definite increase over the old. The real danger is in letting an infestation develop to large proportions before control measures are applied. In other words the weak link in control is frequently the detection system. So far as the Dixie Forest is concerned, there need be no fear in this connection for the present personnel is well trained in this work and is on the alert to anticipate dangerous developments.

In the case of the Swains Creek area a real source of danger exists. The trees on this unit should definitely be treated before there is a further buildup and a spread into adjoining areas. The matter of time of control has been discussed in some detail and is largely a matter of choice. If fall treatment is applied the cost of spotting and treating is likely to be abnormally high because of the scattered infestation and the relatively small number of trees. Next Spring the infested trees can be easily located by their faded foliage, but the matter of access to the area is likely to be acute. There will also be increased fire hazard to contend with in the spring.

The number of trees to be treated on the Swains Creek area was not determined and will depend to a considerable degree upon the extent of the area treated. Roughly it is estimated that there are only a few hundred infested trees along the upper 8 or 9 mile course of this creek.

Douglas Fir Beetle Situation

Wherever Douglas fir was observed there were marked evidences of the work of the Douglas fir beetle (Dendroctonus pseudotsugae Hopk.). In the Strawberry Creek drainage the number of dead trees was especially evident and in some areas practically all the Douglas firs of tree size had been killed. In line with the general policy concerning this beetle no control measures are considered practical. It would be desirable of course to utilize the beetle infested trees wherever possible.

Engelmann Spruce Beetle Situation

Along the south side of Strawberry Creek there are a considerable number of Colorado blue spruce (Picea pungens) that have been killed by the Engelmann spruce beetle (Dendroctonus engelmanni Hopk.). A group of trees containing overwintering brood was examined and it was evident that there were many other currently infested trees on this area. The extent and value of the spruce is not known to the writer, but if appreciable values exist that should be protected, it would be desirable to initiate control of this beetle at once.

Top Killing of Ponderosa Pine

In the vicinity of Panguitch Lake many mature ponderosa pines were noted to have fading tops. An examination of a representative tree revealed the presence of porcupine injury followed by Ips. The Ips work appeared to be primary on the stems for a short distance below the porcupine injury. No control measures are necessary so far as the Ips are concerned.

Submitted by

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September 22, 1940